

LISTING OF THE CLAIMS (1-18)

Claim 1 (currently amended): A circuit for amplifying a signal from a sensor, comprising:  
a current source; and  
a differential amplifier having a first input coupled to the sensor and a second input coupled to the current source;  
a first feedback resistor coupled to the sensor and to a first output of the differential amplifier;  
a second feedback resistor coupled to the current source and to a second output of the differential amplifier; and  
wherein the current source is configured to sink a current from the second input to ground.

Claim 2 (cancelled)

Claim 3 (currently amended): A circuit according to claim 2~~1~~, wherein a gain of the circuit is approximately twice a sum of resistances of the first feedback resistor and the second feedback

Claim 4 (previously amended): A circuit according to claim 1, wherein the current sunk by the current source is greater than a current produced by the sensor.

5. (original): A circuit according to claim 1, wherein the current source includes a field effect transistor coupled between the second input and ground and configured to operate in saturation mode.

6. (original): A circuit according to claim 5, further comprising a bipolar junction transistor having an emitter coupled to the second input and the current source.

7. (currently amended): A circuit for amplifying a signal from a sensor, comprising:  
a current source;  
a differential amplifier having a first input coupled to the sensor and a second input coupled to the current source; and  
a first feedback resistor coupled to the sensor and to a first output of the differential amplifier;

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a second feedback resistor coupled to the current source and to a second output of the differential amplifier; and

a bipolar junction transistor having an emitter coupled to the second input and a base coupled to a reference voltage, whereby a voltage at the second input is fixed.

8. (original): A circuit according to claim 1, wherein the sensor comprises a photodiode.

9. (currently amended): A circuit according to claim 1, further comprising a post-amplifier having inputs coupled to the outputs of the differential amplifier.

10. (currently amended): A method of amplifying a signal from a sensor, comprising:

receiving, at a first node, a current generated by the sensor;

sinking, from a second node to ground, a current greater than the current generated by the sensor; and

providing a first feedback resistance between the first node and a first output of said differential amplifying;

providing a second feedback resistance between the second node and a second output of the differential amplifying; and

differentially amplifying the signal based on signals at the first node and the second node.

11. (currently amended): An optical front-end, comprising:

a photodiode, responsive to light borne by an optical link;

a differential amplifier having a first input coupled to the photodiode and a second input coupled to a constant current source; and

a first feedback resistor coupled to the photodiode and to a first output of the differential amplifier; and

a second feedback resistor coupled to the constant current source and to a second output of the differential amplifier; and

a bipolar junction transistor having a collector coupled to a supply voltage and an emitter coupled to the second input.

12. (previously amended): An optical front-end according to claim 11, wherein the constant current source includes a field effect transistor coupled between the second input and ground and configured to operate in saturation mode.

13. (previously added): An optical front-end according to claim 11, wherein the bipolar junction transistor is configured to fix a potential to the second input at a constant value.

14. (cancelled)

15. (currently amended): An optical front-end according to claim ~~14~~11, wherein a gain of the differential amplifier is approximately twice a sum of resistances of the first feedback resistor and the second feedback resistor.

16. (previously added): An optical front-end according to claim 11, wherein the current sunk by the constant current source is greater than a current produced by the sensor.

17. (cancelled)

18. (currently amended): A method according to claim ~~17~~10, wherein a gain of said differential amplifying is approximately twice a sum of the first feedback resistance and the second feedback resistance.